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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,165	06/27/2003	Serge Julien Auguste Imhoff	DN2003076	7815

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THE GOODYEAR TIRE & RUBBER COMPANY
INTELLECTUAL PROPERTY DEPARTMENT 823
1144 EAST MARKET STREET
AKRON, OH 44316-0001

EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/609,165

Applicant(s)

IMHOFF ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 51206.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 12, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-15, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata (US 5,309,970, of record) and further in view of Boon (US 4,356,219, of record), Toyoda (US 4,963,613, of record), and Watanabe (WO 01/14461, of record). Kawabata discloses a runflat tire construction comprising a radial carcass structure 30 and at least one wedge insert 50,60 in each sidewall, wherein said carcass is formed of polyester reinforcing elements (Column 3, Lines 55-65). While Kawabata is silent as to treating the reinforcing elements, it is extremely well known to treat synthetic fiber reinforcing elements, such as polyester, in order to improve adhesion between said reinforcing elements and the surrounding rubber. In particular, Boon discloses such a

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method in which a cord, particularly polyester, is initially treated with an aqueous emulsion comprising a polyepoxide (aqueous emulsion of epoxy) and subsequently treated with an RFL coating (Column 1, Lines 45-55 and Column 3, Lines 60+). In this instance, Boon teaches that such a method provides a high degree of adhesion between the polyester reinforcing element and the surrounding rubber. One of ordinary skill in the art at the time of the invention would have found it obvious to practice the "treatment" method of Boon in the tire of Kawabata to achieve the above noted benefits.

In regards to the RFL coating, such a coating is extremely well known in a wide variety of industries. Boon suggests that it (RFL or resorcinol-formaldehyde latex) is commonly included as part of an aqueous latex, usually a butadiene/styrene/vinylpyridine terpolymer (Column 1, Lines 25-35). While the reference fails to expressly state that the rubber latex is formed as a combination of said butadiene/styrene/vinylpyridine terpolymer and the claimed copolymer, it is extremely well known to form the rubber latex as a combination of these materials, as shown for example by Toyoda (Column 1, Lines 35-38). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the rubber latex in accordance to the limitations of the claimed invention.

As to the "polyepoxide" being applied to the yarns, it is noted that the claims as currently drafted are in "product-by-process" form and there is no evidence of record that such a method results in a materially different product. As currently drafted, the claim requires that the polyester be treated with an aqueous emulsion comprising a

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dispersed particulate polyepoxide. It is suggested that applicant provide a comparison between the claimed tire (and the disclosed method) and a tire in which a single polyepoxide treatment and an RFL treatment are provided (closest prior art).

With respect to the inclusion of a blocked isocyanate, said isocyanate represents an extremely well known and conventionally used additive in RFL coatings, as shown for example by Watanabe (Page 10, Lines 25-27). The reference expressly teaches that such an additive contributes to enhanced adhesive performance. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to include a blocked isocyanate in the RFL coating of Boon.

Regarding claim 2, the carcass of Kawabata is formed of polyester reinforcing elements.

As to claim 3, PEN and PET represent the common and conventionally used forms of polyester in the tire industry- such a position was set forth by the examiner in the previous office action and remains unchallenged by applicant and as such, it is taken to be admitted prior art.

With respect to claim 4, Boon teaches a wide variety of polyepoxide compounds, including those formed by combining phenol novolac resins and halohydrins (Column 3, Lines 15-25). It is further noted that each of the additional methods are consistent with the well-known and conventional techniques of forming polyepoxides. Lastly, it is noted that the claims as currently drafted are product by process claims and it does not appear that this limitation (method of forming polyepoxide) results in a materially different tire construction- thus, the limitations are not seen to further limit the claimed

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tire article. This differs from the method limitations of the additional claims since the disclosure provides sufficient evidence that the claimed application technique (after forming a cord) results in a materially different article.

Regarding claims 6 and 7, Boon teaches that the above noted aqueous emulsion of epoxy can be formed with a spin finish oil to define a single aqueous emulsion (Column 2, Lines 10-20). The reference further teaches that (a) the aqueous emulsion of epoxy can have a solids content of about 10 to about 50 weight percent (Column 3, Lines 35-40) and (b) the ratio of spin finish oil to epoxy is about 1/15 to about 5/1 (Column 3, Lines 5-10). Thus, it is clearly evident that several of the embodiments described by Boon would have satisfied the claimed range of about 1 percent to about 5 percent, and more preferably about 1 percent about 3 percent. It is emphasized that the minimum amount of epoxy in the first aqueous emulsion is about 10 weight percent- upon being included with said spin finish oil to define an aqueous emulsion as set forth by Boon, the epoxy weight content would be expected to fall within the claimed range. It is further noted that applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed range.

As to claims 8 and 9, Watanabe recognizes a wide variety of well known blocked isocyanates (Page 8, Lines 17-24). As to the specific amount of this compound, one of ordinary skill in the art at the time of the invention would have found the broad range of the claimed invention to have been obvious- this compound represents an "additive" that is designed to improve adhesion and one of ordinary skill in the art at the time of the invention would have expected such a component to be included in a relatively

small amount. Thus, absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include the claimed blocked isocyanates.

With respect to claims 10-13, Boon teaches that the total amount of spin finish oil and epoxy together range between 0.9 and 2.0 weight percent based upon the cord (Column 3, Lines 10-15)- one of ordinary skill in the art at the time of the invention would have recognized such a range to suggest a polyepoxide content (epoxy content) or DPU between 0.3 and 0.7 weight percent. Furthermore, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed amounts/weights.

Regarding claims 14 and 15, the method of Boon teaches that the epoxy resin can be applied before, or after treatment with the spin finish oil or activator (Column 2, Lines 5-10). Also, the reference specifically states that the spin finish oil is necessary for effective rubber to polyester adhesion. It is further noted that the claims as currently drafted are directed to a tire article and these method limitations are not seen to result in a materially different article. As such, they do not further limit the tire construction of the tire. The examples do not compare a cord in which the activator itself (not polyepoxide) was applied prior to and after forming the cord.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata, Boon, Toyoda, and Watanabe as applied in claim 1 above and further in view of Hayashi (US 5,162,437, of record). Regarding the polyepoxide compound, Boon is silent as to the method in which the compound is formed (derived). As noted

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above, Boon teaches the use of wide variety of polyepoxides, including the general class of glycidyl ethers. It is well recognized that such a compound (polyglycidyl ether) is commonly formed or derived from an ortho-cresol formaldehyde novolac resin, as shown for example by Hayashi (Column 2, Lines 7-10). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the well known and conventional technique of forming a polyepoxide.

5. Claims 1-4, 6-16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (US 6,338,374, of record) and further in view of Boon, Toyoda, and Watanabe. As depicted in Figure 8, Nguyen discloses a runflat tire construction having a sidewall insert, a fabric underlay 54' disposed between the carcass and the belt structure, and a fabric overlay 55 disposed between the belt structure and the tread. The reference further teaches that the overlays can be formed of polyester reinforcing elements (Column 9, Lines 20-30). While Nguyen is silent as to treating the reinforcing elements, it is extremely well known to treat synthetic fiber reinforcing elements, such as polyester, in order to improve adhesion between said reinforcing elements and the surrounding rubber. In particular, Boon discloses such a method in which a cord, particularly polyester, is initially treated with an aqueous emulsion comprising a polyepoxide (aqueous emulsion of epoxy) and subsequently treated with an RFL coating (Column 1, Lines 45-55 and Column 3, Lines 60+). In this instance, Boon teaches that such a method provides a high degree of adhesion between the polyester reinforcing element and the surrounding rubber. One of ordinary

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skill in the art at the time of the invention would have found it obvious to practice the "treatment" method of Boon in the tire of Nguyen to achieve the above noted benefits.

In regards to the RFL coating, such a coating is extremely well known in a wide variety of industries. Boon suggests that it (RFL or resorcinol-formaldehyde latex) is commonly included as part of an aqueous latex, usually a butadiene/styrene/vinylpyridine terpolymer (Column 1, Lines 25-35). While the reference fails to expressly state that the rubber latex is formed as a combination of said butadiene/styrene/vinylpyridine terpolymer and the claimed copolymer, it is extremely well known to form the rubber latex as a combination of these materials, as shown for example by Toyoda (Column 1, Lines 35-38). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the rubber latex in accordance to the limitations of the claimed invention.

As to the "polyepoxide" being applied to the yarns, it is noted that the claims as currently drafted are in "product-by-process" form and there is no evidence of record that such a method results in a materially different product. As currently drafted, the claim requires that the polyester be treated with an aqueous emulsion comprising a dispersed particulate polyepoxide. It is suggested that applicant provide a comparison between the claimed tire (and the disclosed method) and a tire in which a single polyepoxide treatment and an RFL treatment are provided.

With respect to the inclusion of a blocked isocyanate, said isocyanate represents an extremely well known and conventionally used additive in RFL coatings, as shown

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for example by Watanabe (Page 10, Lines 25-27). The reference expressly teaches that such an additive contributes to enhanced adhesive performance. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to include a blocked isocyanate in the RFL coating of Boon.

Regarding claim 2, the underlays of Nguyen are formed of polyester reinforcing elements.

As to claim 3, PEN and PET represent the common and conventionally used forms of polyester in the tire industry- such a position was set forth by the examiner in the previous office action and remains unchallenged by applicant and as such, it is taken to be admitted prior art.

With respect to claim 4, Boon teaches a wide variety of polyepoxide compounds, including those formed by combining phenol novolac resins and halohydrins (Column 3, Lines 15-25). It is further noted that each of the additional methods are consistent with the well-known and conventional techniques of forming polyepoxides. Lastly, it is noted that the claims as currently drafted are product by process claims and it does not appear that this limitation (method of forming polyepoxide) results in a materially different tire construction- thus, the limitations are not seen to further limit the claimed tire article. This differs from the method limitations of the additional claims since the disclosure provides sufficient evidence that the claimed application technique (after forming a cord) results in a materially different article.

Regarding claims 6 and 7, Boon teaches that the above noted aqueous emulsion of epoxy can be formed with a spin finish oil to define a single aqueous emulsion

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(Column 2, Lines 10-20). The reference further teaches that (a) the aqueous emulsion of epoxy can have a solids content of about 10 to about 50 weight percent (Column 3, Lines 35-40) and (b) the ratio of spin finish oil to epoxy is about 1/15 to about 5/1 (Column 3, Lines 5-10). Thus, it is clearly evident that several of the embodiments described by Boon would have satisfied the claimed range of about 1 percent to about 5 percent, and more preferably about 1 percent about 3 percent. It is emphasized that the minimum amount of epoxy in the first aqueous emulsion is about 10 weight percent- upon being included with said spin finish oil to define an aqueous emulsion as set forth by Boon, the epoxy weight content would be expected to fall within the claimed range. It is further noted that applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed range.

As to claims 8 and 9, Watanabe recognizes a wide variety of well known blocked isocyanates (Page 8, Lines 17-24). As to the specific amount of this compound, one of ordinary skill in the art at the time of the invention would have found the broad range of the claimed invention to have been obvious- this compound represents an "additive" that is designed to improve adhesion and one of ordinary skill in the art at the time of the invention would have expected such a component to be included in a relatively small amount. Thus, absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include the claimed blocked isocyanates.

With respect to claims 10-13, Boon teaches that the total amount of spin finish oil and epoxy together range between 0.9 and 2.0 weight percent based upon the cord

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(Column 3, Lines 10-15)- one of ordinary skill in the art at the time of the invention would have recognized such a range to suggest a polyepoxide content (epoxy content) or DPU between 0.3 and 0.7 weight percent. Furthermore, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed amounts/weights.

Regarding claims 14 and 15, the method of Boon teaches that the epoxy resin can be applied before, or after treatment with the spin finish oil or activator (Column 2, Lines 5-10). Also, the reference specifically states that the spin finish oil is necessary for effective rubber to polyester adhesion. It is further noted that the claims as currently drafted are directed to a tire article and these method limitations are not seen to result in a materially different article. As such, they do not further limit the tire construction of the tire. The examples do not compare a cord in which the activator itself (not polyepoxide) was applied prior to and after forming the cord.

As to claims 16, 18, and 20, the tire construction of Nguyen includes a fabric underlay and a fabric overlay.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen, Boon, Toyoda, and Watanabe as applied in claim 1 above and further in view of Hayashi. Regarding the polyepoxide compound, Boon is silent as to the method in which the compound is formed (derived). As noted above, Boon teaches the use of wide variety of polyepoxides, including the general class of glycidyl ethers. It is well recognized that such a compound (polyglycidyl ether) is commonly formed or derived from an ortho-cresol formaldehyde novolac resin, as shown for example by Hayashi

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(Column 2, Lines 7-10). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the well known and conventional technique of forming a polyepoxide.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-13 and 16-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 39-55 of copending Application No. 10/768,301. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to one of ordinary skill in the art at the time of the invention to form the tire of '301 as a "runflat" tire. It is extremely well known and conventional in the tire industry to include

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runflat inserts in the sidewall and/or the tire cavity (and thus form a "runflat" tire) to allow a tire to operate in an underinflated condition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

9. Applicant's arguments filed May 12, 2006 have been fully considered but they are not persuasive. Applicant contends that claim 1 requires treatment with polyepoxide before twist of the yarns. However, as detailed above, the claims as currently drafted are in product-by-process form and the particular method in which the polyepoxide is applied does not appear to result in a materially different article. Thus, the claim as currently drafted, simply requires the presence of polyepoxide, which is expressly disclosed by Boon.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, appearing to read "Justin Fischer".

Justin Fischer

May 19, 2006